TRANSCRIPT OF

DDI REMARKS TO THE

SECURITY AFFAIRS SUPPORT ASSOCIATION

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I'd like to thank you very much for the invitation to stand in for John. I bring you greetings from Bill Casey, the Director of Central Intelligence, and John McMahon. I could be secretive beyond what John has said about why John McMahon couldn't come, but unfortunately, thanks to the newspapers you know everything we are doing and a great deal we are not. We have now reached the path where I find that I can read highly accurate reconnaissance schedules in the WASHINGTON POST before I see them on my desk, so there aren't many secrets we have to protect any longer it seems. I'm very glad to be here with you tonight. I must say that after the drive out from San Francisco this evening, I'm kind of glad to be anywhere tonight.

Speaking to you on software is particularly inappropriate for me, as a specialist in Russian studies and an historian. But I am no stranger to inappropriate things. When I was on the NSC staff during one administration that shall remain nameless, I was present when the President of Italy attended a state dinner in his honor. And inappropriately, the entire White House was decorated with thousands of yellow chrysanthemums, the Italian flower of death. I was present when inappropriately at a state dinner for German Chancellor of Schmidt, a visit where the principal topic of

conversation had been offset for our troops in Europe, where the after-dinner entertainment was Joel Grey singing highlights from Cabaret, and ending in his great finale with he song "Money, Money, Money."

Speaking to you on software is hard for me, but I am no stranger to hard assignments. I am one of the few still-living Americans who have the opportunity to tell a President of the United States before addressing several thousand people that his fly was undone. Anyone who works for me and ever says that something is just too hard I tell them, "Tell me about it."

Speaking to you about software strikes me as potentially embarrassing. But I'm no stranger to embarrassment. I remember one presidential trip I was on where the President had a private meeting with Pope Paul VI at the Vatican. Henry Kissinger was determined that the then Secretary of Defense Melvin Laird would not attend the meeting, it seemed to Kissinger entirely that the Secretary of War - as it were should attend the meeting of the Pontiff. So he kept it a secret, the timing of the meeting. And while the President was meeting privately with the Pope and the rest of us were waiting for the general audience to follow, who should come striding down one of the corridors of the Vatican quarter but Melvin Laird smoking an enormous cigar. Kissinger was irate that Laird had found out about the meeting, but told him that obviously now that he was there he could clearly attend the general audience but for God sake, Mel, put out the cigar. So Laird tapped out his cigar and put it in his pocket. The meeting between the Pontiff and the President soon

broke and we went in for the general audience and there were two rows of chairs facing a small table at which he Pope sat. Laird and Kissinger sat on the back row, Laird on the end. We were several minutes into the meeting and Kissinger looked over because he heard this kind of patting going on. He didn't think it was Laird's heart palpitating, and he looked over and there was a little wisp of smoke coming out of Laird's pocket. He looked back and was paying attention to the Pope and the next thing he saw and heard was this enormous clapping and these billows of smoke coming out of Laird's pocket. While, the rest of us couldn't see what was going on in the back row, we heard this slapping noise going on and thought that we were being cued to applaud. So we all broke into spontaneous applause. Well literally, God only knows what the Pope thought seeing the American Secretary of Defense ~~emulating~~ IMMOLATING himself and the entire party applauding the fact. So I am no stranger to embarrassment. So granted that my talking to you about software is inappropriate, difficult, and potentially embarrassing to use the saw, my job here is to speak and yours is to listen and with any luck we'll finish it about the same time.

This past summer, the Security Affairs Support Association became a professional organization, that is a change that allows government employees to seek membership. This confirms the goal for which this organization has been well known, to create an organization in which the security affairs interests of government and industry can find common meeting ground to discuss issues of mutual concern. This arrangement makes good sense, because it takes

advantage of the talents, capabilities, and initiatives in both private and in government. We all know that neither has monopoly on brains or talent and certainly not money.

This country is unique in the ways in which government and private industry work together. In our work we have long depended on you and the companies you represent and many others to build large technical collection systems and design and build computer hardware and software. Beyond this, however, we also have depended on your expertise and your facility to help us understand and forecast Soviet weapons systems. More recently we are turning ever more frequently to the private sector for assistance on a broad range of other areas. From new technologies to international economic problems to scores of other subjects covering more than fifty different things. Just this year more than 1,200 CIA analysts attended more than 500 conferences, many of which are sponsored by your companies and others in the private sector.

In the U.S. we rely on combination of patriotism and profit motive to make our system work. And I believe the evidence suggests that the system serves us well. New technological devices, new analytical techniques that enable us to understand growing threats to U.S. and its people are based on asynergistic nature of private industry and government.

I could cite several examples to support my contention that our system of private and public developments work well. Our achievements in space certainly prove point--and our ability to

create new and more effective defense systems also requires close working relations between public and private sector. There is little question that developments in computer world count as well. As we enter era of fifth generation computers, we recognize that maintaining our lead over our Japanese and European allies, and over the Soviets would not be possible without close cooperation between government and industry. It is clear that U.S. is not in this race alone any more. The NEW YORK TIMES recently claimed we could look back and see others running. But we're still out in front of the pack, and we certainly ought to stay that way.

Before addressing the major subject of your conference, and of my presumed talk on Agency software, I would like to give you briefly a more general picture of where we've been and where we're going. The last four years have seen remarkable growth in the Intelligence Community's budget. Our increases have on the order of 15-20 percent a year. Now while this now leveling off, it has enabled us to restore many of the capabilities that we lost in 1970s. These funds have allowed us to bring on board operations officers, analysts, technical specialists, and support personnel.

Speaking very narrowly of my own organization the Directorate of Intelligence, our reorganization three years ago undertaken, by the way, by John McMahon, my predecessor, to integrate our analytic disciplines has created a quantum jump in both and the quality of analytic products we can deliver to policymakers. Our analysis has taken on a new dimension because political, economic, and military analysts--and analysts from other disciplines as well--are working

together to create a multifaceted approach to problems. For the last four years, we in CIA for the first time have developed and implemented a comprehensive research program covering a staggering number of countries and issues. We devote now about half our resources to the Soviet Union, from its economic and political problems to its military strength, future weapons programs and strategic intents. The other half of our efforts and it represents a significant change in intelligence sources and allocations is focused on problems as diverse as terrorism, narcotics, political instability in key countries, international energy and resource development, nuclear non-proliferation, the gray arms market, technology transfer, forecasting food supplies, tracking wars and insurgencies worldwide, monitoring Soviet compliance with arms control agreements, scientific and technical developments worldwide, and many more. We produced more than 800 major research assessments last year, along with our current intelligence. More importantly, the dedicated research effort is establishing once again the strong base of information, data, analysis, and expertise to support the policy process.

The production of national estimates and the speed with which we are producing them has also increased. Estimates can sometimes be the source of controversy, you can read about most of them in the newspapers, but we are making an effort to provide decision makers with the message they have to have--not necessarily the message they want to hear. I can report to you that in recent years, thanks primarily to the efforts of Bill Casey, a spirit of real cooperation and mutual respect perhaps unique in the history of the Intelligence

Community has developed among the principals of the intelligence agencies. One reason for this has been a strong effort to insure that all hypothesis and alternative scenarios and conclusions are heard and reported to the policymakers. Those agencies that disagree with the minority view spell out their differences in estimate. And we no longer relegate those minorities views to them but they are embodied in the full text of the estimate. We make tough calls, calls which are sometimes painful for policymakers. But we are meeting our commitment to provide the best judgment without partisan flavor or political taint.

On collection side, progress also has been made. We have rebuilt our human intelligence capability after severe cuts of the last administration. In fact, the rebuilding began when President Carter realized that White House could not operate without good sources of information. While the young people we are hiring today lack some of language capability and area knowledge we would like, still they are remarkably sharp and demonstrate a talent and a drive that gives us confidence in our future capabilities. Indeed I would say that sometimes their skills are awesome.

CIA received more than 250,000 inquiries about employment last year Our recruiters are meeting receptive audiences on college campuses these days for the most part. And it is interesting to note that there appears to be renewed interest in government service more general

On the technical side, investments in new overhead systems are beginning to pay off. This means a tremendous increase in the quality and precision of intelligence information we can collect. It also means that the volume of data will substantially increase. This suggests that we must begin to invest in processing systems to match our capability in collecting raw data. But beyond this in many ways, in my view, we are better prepared to process and use information from existing and new overhead systems than we are growing human source reporting and most daunting of all the tidal wave of increasingly vital overtly-available information, particularly in the scientific and technical arenas. It is then our need to avoid being overwhelmed by this volume of information from all sources where developments in computers, software, and other new technologies really must help us.

As I indicated at the outset, this is a very tough audience for me as student of Russian history to address on software, since most of you are experienced professionals and are well versed not only in sophisticated computer techniques, but you know a good deal about intelligence applications as well. But like many managers in industry and government I am learning quickly. I'd like to make a few brief remarks about the present state of our computer activity and where we are headed.

First, and I suppose, partly as an element of self confession, let me amplify just for a moment on a problem I mentioned lightly which is in my opinion actually a serious one. A serious problem for both American industry and government and that is the computer

illiterate senior manager. To tell the truth, and I don't think I'm telling you any new truth, decisions on hundreds of millions of dollars in computers and ADP equipment are made by managers who hardly a mainframe from a Mack truck. What do we do? Too often we turn to the computer specialist in our own organization who think narrowly and protect turf and for whom larger scale planning, networking, and experimenting is an anathema. And so we waste money on inadequate systems that can't talk to each other and meet only today's narrow views. It seems to me that an imperative talent not just for we in the Intelligence Community, but in industry as well and your probably the one exception, is to bring senior managers into the computer age and to enable them to know enough to use effectively experts who can be giving sensible, broad-ranging, future-oriented decisions and guidance.

Now let me turn to CIA specifically. The major problem in the use of computers at CIA revolve around compartmentation and security. Unlike organizations of similar size in the private sector, we have to have a system that operates on a need-to-know basis, and that may involve only handful of people. We must protect at the same time against "hackers" from the outside the possibility of "moles" from the inside. This is a major reason why we have spent so much time and money developing our own software--we have found that many private sector applications are not sufficiently stringent or secure for our purposes. We also realize that, from the perspective of private industry, the costs of developing a package for government that has no other application often is not profitable.

The CIA is now operating five major computer systems, all using the same general architecture, but each almost completely independent of the other. We have system for analysts, one for operations, one for administration, one for physical and personnel security, and one for processing and analyzing data from technical collection. Each of our systems use similar but distinct software applications, all developed in house. For example, our administrative system, includes electronic mail. We had to develop software that would allow access based on individual clearance and need to know. A system that is impervious to serious efforts at penetration as well as idle curiosity.

In contrast though, some of our needs not so unique. The agency is moving away from reliance on huge main-frame systems to increasing use of computer networks and even self-contained personal computers. We envision systems where many professionals will rely on personal computers for much manipulation of data, and where standard forms of software--spread sheets or word processing programs--can be bought over the counter. This will allow us to shift from software designed by ADP professionals for other, if you will forgive me, "computer freaks" to systems that are more user friendly. Indeed, the use of personal computers may create new security problems for us--we may have to not only guard against analysts taking their papers home with them but also their floppy discs.

We have high hopes that the fifth generation of computers--and developments in Artificial Intelligence--will have great application

at CIA. We will rely on AI in expert systems applications to enable us to detect indicator anomalies for warning, to synthesize combinations of data for analysis, to scan mail to pick out critical messages, or to pick out gaps in our knowledge. Applications of AI in processing huge quantities of raw data without having to translate raw data into standardized formats as we now do should help separate the wheat from the chaff, especially in SIGINT and imagery.

AI should do some things for us that will enhance our ability to support the policymaker. More sophisticated simulation and modeling techniques will increase our ability to predict alternative outcomes of future events. AI should help analysts compare dissimilar forms of data--imagery, SIGINT, regular text--without having to put everything a in standard format. AI might help us package our inputs to the policy process in more usable forms to meet consumer needs, and AI may help shorten the production cycle. Another application might involve accessing more data on a real time basis, especially in crisis. So, it appears that we are only beginning to tap the potential of the next computer generation.

Frankly, progress in area of AI, in our view, is likely to be painfully slow. Promises of quick advances with practical applications should be treated with some skepticism. We understand the reasoning process that experts use to generate judgments, but much is "intuitional," especially when dealing with softer data. I can't tell you how many contractors have come to me trying to sell me a system that will enable me flawlessly to predict the next

action of the Soviet leadership. Until we can understand more about the intuitional process works, it seems to me, it will be difficult to write "expert systems software" that can duplicate what analysts do. Despite these problems, AI offers much promise, and we will look to the research and industrial communities for advances in these areas.

On the operations side, we hope to move toward a paper-free or almost paper-free environment. This especially important in protecting overseas systems, although I might add that judging from the newspapers it would leave a number of Iranians unemployed who are still trying to keep together the papers that went through the shredder in 1979. A similar system on production side may enable us to develop a high-quality product to key consumers without going through the printing process. And frankly, I believe this outcome is nearer than virtually any policymaker believes at this point. You obviously can understand how much better off we would be if we could keep all printed material out of the hands of policymakers in Congress.

CIA, like many private firms our size, is suffering great software applications backlog. Just as in the private sector, we have too few programmers and too many jobs. Our present back-log probably amounts to perhaps as much as some 400 man-years.

Clearly we should be working together to develop more effective and efficient programming methods. One way to solve the problem involves more end-user programming, and this will become more

practical as we move away from large central systems to desk-top machinery. We will also be aided in the future by the fact that a new generation of employees is increasingly computer-literate. New professionals are running about 50 percent computer literacy, thanks I suppose to video games and presence of computers in high schools and colleges. We've even gotten our most senior officers to begin using computers--we've all had to take some training and learn some simple computer language so that we can communicate with each other without having to meet in Executive Dining Room. Of course, senior officials are no more above pranks than anyone else, I received an anonymous electronic mail message a couple weeks ago on my terminal indicating that the Director had decided that my services were no longer required, to please be gone by 5 o'clock.

In terms of Intelligence Community, we have developed several ways of working together, although much of our software has been developed on an internal agency basis. The Community does try to share ideas, information, and technology, including software where possible, although we do have to maintain compartmentation. Air Force and DIA have developed modular architecture called MAXI for sharing intelligence and processing messages for analysts. Eventually, the Community will have some 33 facilities for such sharing--15 of these are now on line. Shared SAFE systems between CIA and DIA are now completing Phase I which permits shared message retrieval capability. Phase II will take us into 1987-88 time frame.

The Intelligence Community is also sponsoring the Community Information Retrieval System. If successful, this will bring

together processing assets from five networks at DIA, NSA, Air Force, CIA, and NPIC. Major difficulty involves security and standardization problems. The Community is also working toward developments in Artificial Intelligence. CIA's Dr. Phil Eckman chairs the Artificial Intelligence Steering Group--with membership from a dozen agencies and federal components. Because of costs associated with AI, we want to avoid duplication of effort and circulate information about the subject. CIA will sponsor its third annual Community-wide symposium in March of 1985. This will bring together members of Intelligence Community and private industry to exchange ideas of mutual benefit.

ADP now consumes a substantial portion of CIA's resources and space. We're now well along in construction of new headquarters facility to accommodate people displaced by computers. Our experience is probably typical of organizations our size, and our aim is to stabilize ADP costs and perhaps even drive them down One way to do this is to push the state of art in selected critical areas and not wait for it to catch up with our needs. This brings me back to theme I raised at the beginning of my remarks. The synergistic nature of relations between intelligence organizations and private industry should boost the speed--although I hope not the cost--of solving software problems.